ABSTRACT

A low thermal impedance optoelectronic device includes an optical cavity adjacent a low thermal impedance DBR that provides improved heat dissipation and temperature performance. The thermal impedance of the DBR may be reduced by increasing the relative or absolute thickness of a layer of high thermal conductivity material relative to a layer of low thermal conductivity material for at least a portion of the mirror periods. The thermal impedance may also be reduced by increasing the distance between phonon scattering surfaces by increasing the thickness of the high thermal conductivity layer, the low thermal conductivity layer or both.